

REMARKS

Claims 1-36 are pending in this application. Attached hereto is a complete listing of all pending claims, with their current status listed parenthetically. By this Response, claims 1 and 5 have been amended, and are presented with markings to indicate their current amendments. Claims 4 and 10 have been cancelled without prejudice.

Rejection Under 35 U.S.C. §103(a)

In paragraphs 1 and 2 of the Office Action, claims 1-3 and 5-9 stand rejected as unpatentable under 35 U.S.C. § 103(a) over U.S. patent 5,889,767 ("Kimura") in view of U.S. Patent 4,763,325 ("Wolfe"). Applicant respectfully traverses this rejection.

A. The Law of Obviousness

In order to establish a prima facie case of obviousness, three basic criteria must be met:

"First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined), must teach or suggest all of the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on the applicant's disclosure." M.P.E.P. § 2142.

Applicant submits that amended independent claims 1 and 5 have elements that cannot be found, either expressly or inherently, in either Kimura or Wolfe. Specifically, amended claim 1 now recites, in part:

". . . wherein said communications between said first device and said second device is configured to operate in an ultra wide band environment."

Amended claim 5 now recites, in part:

". . . wherein said communication between said first slave transceiver and said second slave transceiver is configured to operate in an ultra wide band environment."

Neither Kimura nor Wolfe teach or suggest "operating in an ultra wide band environment." Ultra wide band technology is discussed in several areas of the originally-filed specification, such as page 7, line 4, and in other locations. For example, "data is transmitted via impulses having 100 picosecond risetime and 200 picosecond width, which corresponds to a bandwidth between about 2.5 GHz and 5.0 GHz." (page 13, lines 14-16 of the specification).

That is, the claimed ultra-wide band technology is very different from the conventional telephone communication technology taught by Kimura and Wolfe. That is, Kimura teaches analog telephone communications (col. 9, lines 5-6) and ISDN telephone communications (col. 9, line 62). This type of conventional telephone communication employs a continuous, sinusoidal waveform with a bandwidth of about 20 kilohertz. Wolfe teaches large-scale telephone communication systems using geosynchronous satellites (col. 1, lines 13-26). Like Kimura, the telephone communication system in Wolfe employs a continuous, sinusoidal waveform with a bandwidth of about 20 kilohertz (for the terrestrial portion of the system). Satellite communications also use a continuous, sinusoidal waveform.

In contrast, the ultra wide band technology as recited in claims 1 and 5 employs a multiplicity of discrete electromagnetic pulses, instead of a continuous, sinusoidal waveform.

Therefore, Applicant respectfully submits that the rejection of claims 1 and 5 has been traversed. Because claims 2-3, and 6-9 depend from claims 1 and 5, respectively, it is respectfully submitted that the rejection of claims 2-3 and 6-9 has been traversed by virtue of their dependency from either claim 1 or 5. M.P.E.P. § 2143.03.

In paragraph 4 of the Office Action, claims 11-36 stand rejected as unpatentable under 35 U.S.C. § 103(a) over Kimura in view of U.S. Patent 6,668,008 ("Panasik"). Applicant respectfully traverses this rejection.

As discussed above, Kimura teaches analog telephone communications (col. 9, lines 5-6) and ISDN telephone communications (col. 9, line 62). This type of conventional telephone communication employs a continuous, sinusoidal waveform with a bandwidth of about 20 kilohertz.

Panasik teaches ultra-wide band communication methods and systems. Specifically, Panasik teaches that ultra-wide band communication systems are characterized by microwatts of transmitted power, bandwidths of ten times the data rate, center frequencies nearly the same as the bandwidth, and that generally utilize wavelet waveforms having a bandwidth of several GHz (col. 1, lines 13-19).

Applicant's independent claims 11, 17, 28 and 32 all include a recitation of ultra wide band technology. For example, claim 11 recites, in part, "a master transceiver configured to transmit ultra wide base band pulses." Claim 17 recites, in part, "an antenna configured to transmit a plurality of ultra wide band base band signals." And, both claims 28 and 32 comprise ultra wide band communication systems.

As explained above, the Office Action makes a Section 103 rejection by combining two references, Kimura and Wolfe. Because a modification to the prior art is required to support this 35 U.S.C. section 103 rejection, an appropriate motivation to modify must be set forth in order to establish a *prima facie* case of obviousness. See, *In re Fritch*, 972 F.2d 1266 (Fed. Cir. 1992). These requirements will be discussed below:

I. No motivation to combine references

As discussed above, Panasik teaches ultra-wideband, or impulse radio communication, which uses discrete electromagnetic pulses that may occupy bandwidths spanning hundreds of megahertz.

In contrast, Kimura teaches conventional communication through specific, assigned radio frequency channels. That is, Kimura employs conventional carrier wave technology, which emits a continuous waveform at a specific, narrow frequency.

These are completely different communication technologies, and thus there is no motivation to combine these references.

II. No reasonable expectation of success.

The second prong of a *prima facie* case of obviousness requires a reasonable expectation of success. However, according to M.P.E.P. § 2142.01 "if the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims *prima facie* obvious."

The Examiner proposes to combine Panasik with Kimura. As discussed above, Kimura employs conventional carrier wave technology that emits a continuous waveform at a specific, narrow frequency. In contrast, Panasik teaches ultra-wideband, or impulse radio technology that emits discrete electromagnetic pulses that span hundreds of megahertz of frequency.

Clearly, a fundamental change to Kimura's principle of operation is required for the Examiner's proposed combination to operate, and thus there is no reasonable expectation of success.

In view of the above discussion, Applicant respectfully submits that the Section 103 rejection of claims 11-36 has been traversed. Because claims 12-16, 18-27, 29-31 and 33-36


depend from either claims 11, 17, 28 and 32, respectively, it is respectfully submitted that the rejection of claims 12-16, 18-27, 29-31 and 33-36 have been traversed by virtue of their dependency from either claim 11, 17, 28 or 32. M.P.E.P. § 2143.03.

Conclusion

Applicant believes that this Response has addressed all items in the Office Action and now places the application in condition for allowance. Accordingly, favorable reconsideration and allowance of claims 1-36 at an early date is solicited. Should any issues remain unresolved, the Examiner is invited to telephone the undersigned.

Respectfully submitted,

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Date


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